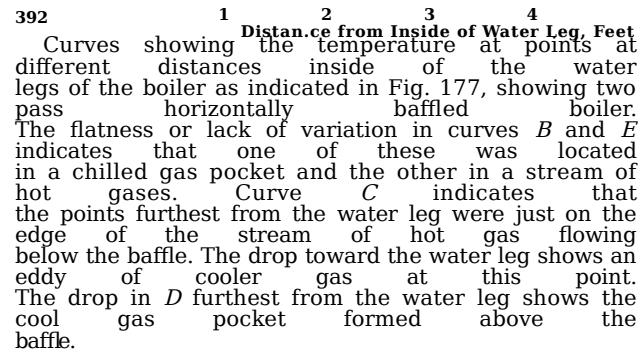
Fig. 174 shows the stream of hot gases passing through a single pass horizontally baffled boiler. The location of pyrometer couples is indicated by letters and the curves in Figs. 175 and 176 have been plotted from the readings made. The point *B* on curve in Fig. 175 is 125° lower than the peak of the curve in Fig. 176. In commenting upon Fig. 176 (Fig. 14, Bulletin 145) the bureau says: " Couple *B* showed a considerable range of temperature variation. The maximum temperature, which was at a point about 2 ft from the inside of the water leg, was 430° C.



Curves showing the temperature at points at different distances inside of the water legs of the boiler as indicated in Fig. 177, showing two pass horizontally baffled boiler. The flatness or lack of variation in curves *B* and *E* indicates that one of these was located in a chilled gas pocket and the other in a stream of hot gases. Curve *C* indicates that the points furthest from the water leg were just on the edge of the stream of hot gas flowing below the baffle. The drop toward the water leg shows an eddy of cooler gas at this point. The drop in *D* furthest from the water leg shows the cool gas pocket formed above the baffle.

higher than that at a point 4 ft from the water leg. This wide variation was undoubtedly caused by the position of the end of the lower baffle and the sudden turn of the gases. *It seems that immediately above the lower baffle there was a layer of comparatively inert gas which had a temperature much lower than that of the stream of moving gases."* The italics are the writer's. It will be noted that the bureau attributes this correctly as a layer of cool gas is indicated in Fig. 174 immediately above the lower baffle. The drop in the curve *C* (Fig. 176) is likewise due to this eddy of cooler gases. In this boiler (Fig. 174) the slope of the upper baffle is such that it will tend to increase the velocity of the stream of hot